

## **Publishable (Executive) Summary**

### ***Project Goal and Overview***

The SOCIABLE project is introducing, deploying and piloting a novel integrated ICT service empowering the elderly to improve their mental ability, while at the same time boosting their social interaction. The SOCIABLE service integrates human support and care services offered by care centers and specialized/expert operators, with state-of-the-art ICT services over leading edge surface computing technologies (Figure 1), notably (multi-touch) surface tables and (touch-based) surface personal computers. As part of the service, aged individuals engage in cognitive training and social interaction activities through the use of surface computers. Ergonomic multi-touch tables are used within the care centers, while surface computers (surface PCs) are employed for in-home based training activities.

The final version of the SOCIABLE platform comprises twenty-seven (27) cognitive training games, which cover different cognitive skills and are administered to the elderly users through the SOCIABLE surface computing platform. In addition to the 27 cognitive games, the platform includes a special play activity called «Book-of-Life», which emphasizes the social interaction of the elderly. Furthermore, the SOCIABLE platform comprises a set of tools that facilitate medical experts in the design, development and deployment of SOCIABLE sessions, as well as in the production of reports. Hence, SOCIABLE offers (through its platform) cognitive training and social activities ICT-based services to the elderly, while at the same time facilitating medical experts to monitor and supervise SOCIABLE play activities.

Up to date the SOCIABLE services have been deployed across seven pilot sites (including hospitals, care/leisure and day centers) in four European countries (Greece, Italy, Norway, Spain). These pilot sites are operated by end-user partners of the project, while they are supported by medical and technical partners of the project in terms of medical and ICT aspects respectively. In particular, health professionals supervise the SOCIABLE sessions, while technical experts provide the needed technical support and software updates to the SOCIABLE platform. The SOCIABLE service (and its pilot operations) target three main elderly groups suffering from cognitive decline, including healthy elderly, elderly with Mild Cognitive Impairment (MCI) and elderly with mild Alzheimer's disease (AD).

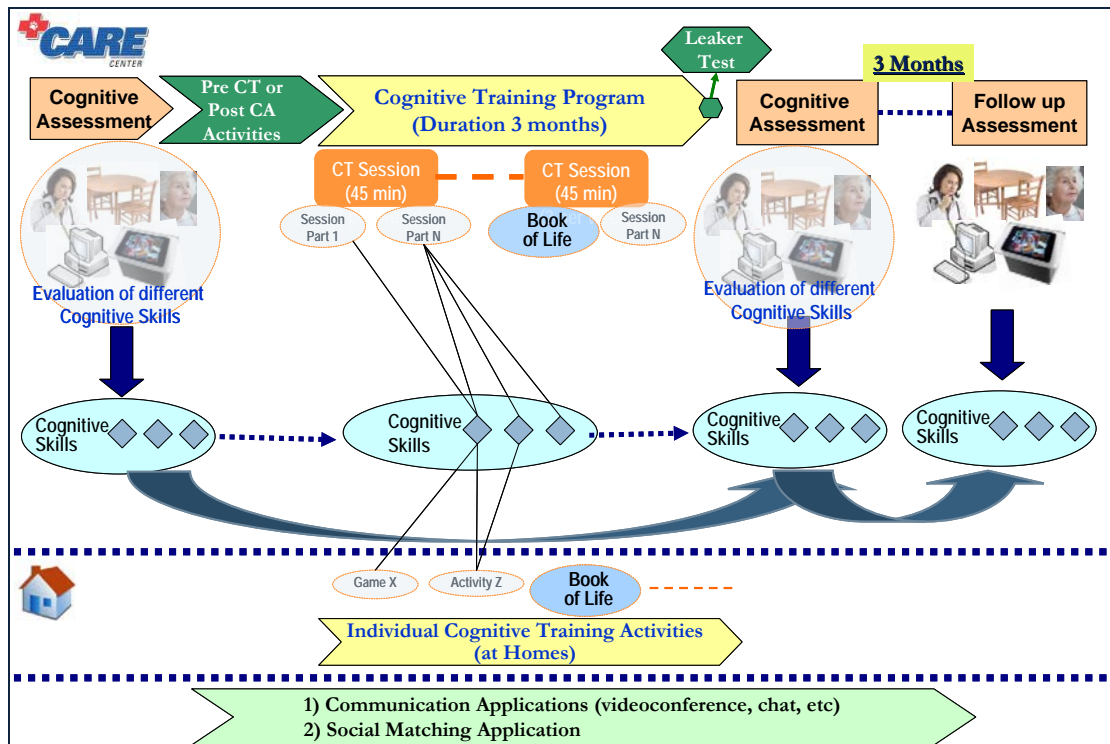
Elderly from these user groups are involved in SOCIABLE sessions in two different ways/flavors:

- An informal way, which involves the engagement of the elderly in SOCIABLE sessions, without the application of the processes foreseen as part of the SOCIABLE study design and clinical protocol (such as the formal cognitive, functional and affective assessment of the subjects). However, following the conclusion of their sessions, elderly participants fill-in several questionnaires, including satisfaction surveys and leaker tests, with a view to providing feedback on their experience.

- A formal way, which involves the application of the SOCIABLE study design and clinical protocol, as part of a **multi-national, multicenter, randomized, placebo-controlled efficacy study**. SOCIABLE formal pilot operations (i.e. as part of the randomized study) involved more than 350 elderly users across the seven pilot sites. These individuals will use SOCIABLE from care centers or their homes. The results of the SOCIABLE study outlined above, will be processed in order to assess the effectiveness of the SOCIABLE approach, which could boost its applicability in cognitive training and social activation of elderly.

In terms of the formal pilot operations outlined above, the project has established and uses specific inclusion and exclusion criteria associated with the recruitment of elderly individuals to the SOCIABLE programmes. These criteria are based on relevant medical tests, which comprise the SOCIABLE battery for cognitive, functional and affective assessment of the elderly. Overall, the SOCIABLE pilot process is illustrated in Figure 1 and involves the following steps:

- A cognitive, affective and functional assessment of the elderly, which is based on the SOCIABLE neuropsychological battery. The battery is administered to the elderly users prior to his/her inclusion in a SOCIABLE programme. The assessment of the elderly serves as a vehicle for classifying the elderly in one of the three SOCIABLE target groups, (normal/healthy elderly, elderly with MCI (Mild Cognitive Impairment), elderly with mild AD (Alzheimer's Disease) and deciding his/her inclusion in the programme. Furthermore, the neuropsychological tests result in an assessment of the cognitive skills of the elderly, which are used to shape the SOCIABLE games and exercises that are administered to the elderly user.
- Following the cognitive, functional and affective assessment of the elderly, and assuming the successful inclusion of the elderly in the SOCIABLE programme, the health professional carries out a number of preparatory activities towards the SOCIABLE sessions. These activities include briefing/training the elderly in the use of the SOCIABLE surface platform, while also preparing his/her sessions on the basis of the health record of the user.
- Execution of a SOCIABLE programme comprising several sessions. Each of the sessions involves cognitive training games and the Book-of-Life application for social activation. Furthermore, the elderly is given the opportunity to interact with other elderly via a set of communication applications and services. Overall, the typical duration of a programme is three months. In the scope of this programme the elderly attend to two or three sessions per week. The typical duration of a session is 60 min.
- A leaker test follows the completion of a SOCIABLE programme, in order to get elderly users' feedback on the procedure. This leaker test is an element of the users' evaluation of the SOCIABLE approach.
- A cognitive, functional and affective assessment of the elderly follows the leaker tests in order to access the positive effects of the programme on the elderly users.
- A follow-up assessment of the elderly, outside the scope of the programme, is carried out (approximately three months after the end of the programme) in order to evaluate/assess the longer term impact of the SOCIABLE intervention.



**Figure 1: Overview of the SOCIABLE Pilot Process Concept**

The project started May, 1<sup>st</sup>, 2009 with a duration of 42 months<sup>1</sup> (including a three months suspension period). The first period of the project emphasized the definition of the SOCIABLE services, the technical specification of the SOCIABLE platform and play activities, as well as the analysis of the main requirements of the elderly and the medical experts. Moreover, during the first period of the project, the partners have started the preparation of the pilot sites of the project, in terms of the establishment of the new processes, the installation and deployment of the relevant ICT infrastructures (including the surface hardware and the SOCIABLE software), as well as on the attraction and active engagement of elderly end users and medical experts.

During the second period of the project, the work has focused on the technical implementation, integration and testing of the SOCIABLE platform, the completion of the pilot sites preparation and most importantly the commencement of pilot operations. Hence, the second period of the project has signaled the successful conduction of pilot operations across all the pilot sites. Pilot operations have been intensified and evaluated during the third year of the project, which is described as part of this report.

The project has undertaken significant steps towards the sustainability of the project's platform, as well as its commercial exploitation. All partners have elaborated sustainability plans, business plans and marketing plans. Furthermore, they have endorsed an exploitation agreement, which regulates intellectual property

<sup>1</sup> Based on the latest amendment of the SOCIABLE contract that incurred the time extension of the project till October 31<sup>st</sup>, 2012

shares and identifies rights and obligations associated with the commercial exploitation of the SOCIABLE platform and services.

The present report focuses on the description of the project's work and achievements during the third period 01/08/2012-31/10/2012 (M28-M42) of the project, where M1 signifies the project start). This is the last period of the project, during which SOCIABLE concluded its pilot operations, evaluated the pilot operations from a technical, financial, clinical and end-users perspective, finalized the SOCIABLE platform and undertook significant steps towards the sustainability, exploitation and commercialization of the project's results.

The following table lists the main KPIs associated with the SOCIABLE project, including both the target values (set in the project's DoW document) and the values actually achieved.

<b>Key Performance Indicator</b>	<b>Target Value</b>	<b>Achieved Value</b>	<b>Comments</b>
Number of Elderly engaged in SOCIABLE programmes during the pilots	<b>&gt;350</b>	<b>&gt;500</b>	<b>The project included over 350 elderly in the SOCIABLE clinical study. The total number of users (including butterfly users) exceeded 500</b>
Number of cognitive games integrated in the SOCIABLE platform	<b>25</b>	<b>27</b>	<b>The 27 cognitive games are listed in Deliverable D4.5</b>
Improvement of the elderly cognitive, functional and affective assessment scores (comparing to the user of conventional paper & pencil methods)	<b>Improvement of SOCIABLE elderly vs. a Control Group</b>	<b>Groups attending SOCIABLE cognitive training improved their cognitive status comparing to a control group</b>	<b>This outcome was derived based on the SOCIABEL clinical methodology (see deliverables D7.2a and D7.2b for more details)</b>
Number of different elderly groups (formally defined) to participate in the pilots	<b>3</b>	<b>3</b>	<b>Over 100 elderly from all three groups (cognitive intact elderly, elderly with MCI, elderly with mild Ads)</b>
Pilot Sites Completing SOCIABLE programmes according to all	<b>7</b>	<b>7</b>	<b>All pilot sites concluded pilot operations according to the provisions described in</b>

common specifications			<b>the clinical protocol of the SOCIABLE operations.</b>
Positive ROI/IRR Financial Indicators for Private Organizations (taking also into account EC co-funding)	<b>Acceptable ROI/IRR (relative to organization threshold)</b>	<b>Achieved for both end-users and integrators of the SOCIABLE services</b>	<b>An ROI analysis for service integrators can be found in deliverable D8.2 (for partners CEDAF and SiLO) Several end-users (including potential customers) have accepted the value of the SOCIABLE platform; Sales will commence shortly after the end of the project</b>

**Table 1: SOCIABLE KPIs (Key Performance Indicators)**

As evident from the table, SOCIABLE has managed to research and in several cases to exceed the KPI values set to audit the project's performance. In addition to these KPIs the project has set indicators associated with the dissemination activities. An exhaustive list of SOCIABLE dissemination activities is provided at the end of this document. The list demonstrates that most of the quantitative targets were in most cases achieved.